



New Hampshire Greenhouse Gas Emissions Inventory and Projections

Chris Skoglund
Climate Program Specialist
NH Dept of Environmental Services
Concord, NH

Greenhouse Gas Inventory

- Assessed the state's greenhouse gas emissions
- Inventory of historical emissions from 1990 to 2004
 - Determine current emission levels
 - Identify recent trends
- Projection of emissions to 2030
 - Identify opportunities for interventions
- Initial analysis conducted by NHDES for further discussion and with open to refine further

Greenhouse Gas Inventory

- Tools
 - The EPA's *State Greenhouse Gas Inventory Tool*
 - Excel-based tool
 - Used by several other New England states
- Data
 - Utilizes New Hampshire specific data
 - Energy Information Administration (EIA)
 - Utilized defaults when necessary

Greenhouse Gas Inventory

- Inventoried six gases
 - Carbon Dioxide (CO_2)
 - Methane (CH_4)
 - Nitrous Oxide (N_2O)
 - Hydrofluorocarbons (HFCs)
 - Perfluorocarbons (PFCs)
 - Sulfur Hexafluoride (SF_6)

} Synthetic gases

 - *Black Carbon was not considered*
- Quantified in million metric tons of CO_2 equivalents (MMT CO_2e)

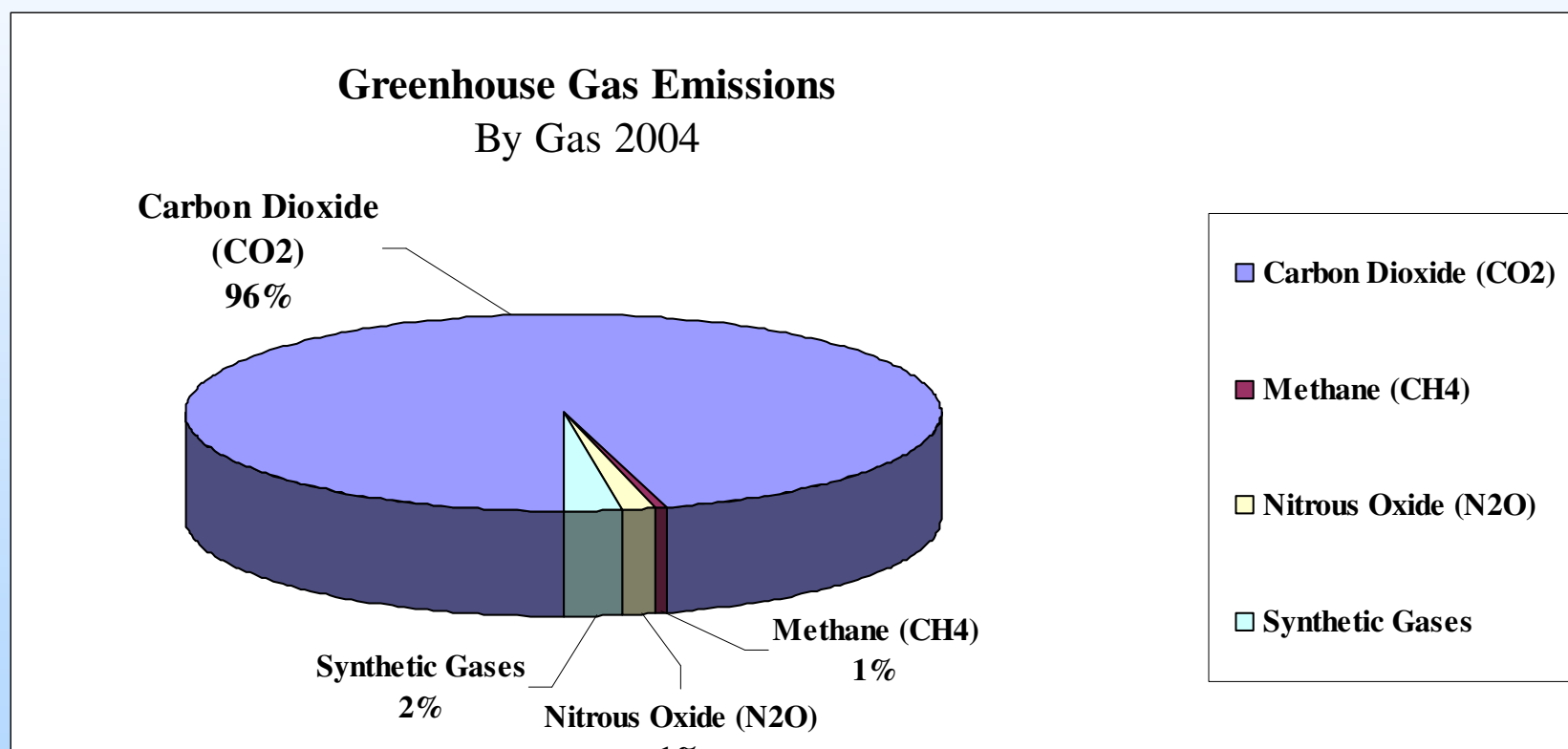
Greenhouse Gas Inventory

- The sources included:
 - fossil and biomass fuel combustion;
 - industrial production processes;
 - gas and oil activities;
 - landfills and wastewater treatment;
 - agriculture;
 - and land use change and forestry.

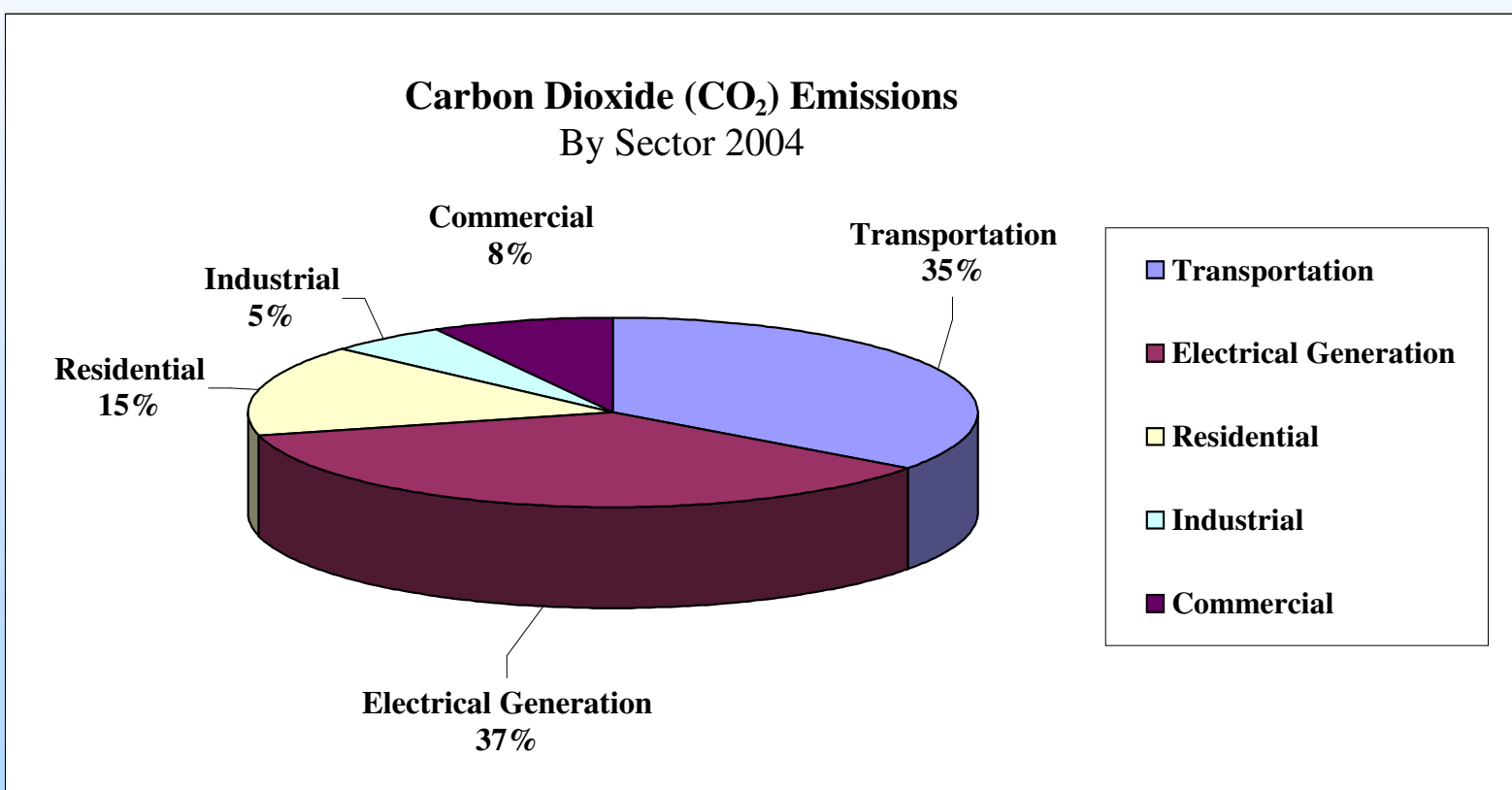
Greenhouse Gas Inventory

- Gross emissions aggregated by source sectors
 - Electric Generation
 - Transportation
 - Residential
 - Commercial
 - Industrial
 - Agriculture and Waste
 - Land Use Change and Forestry

Greenhouse Gas Inventory

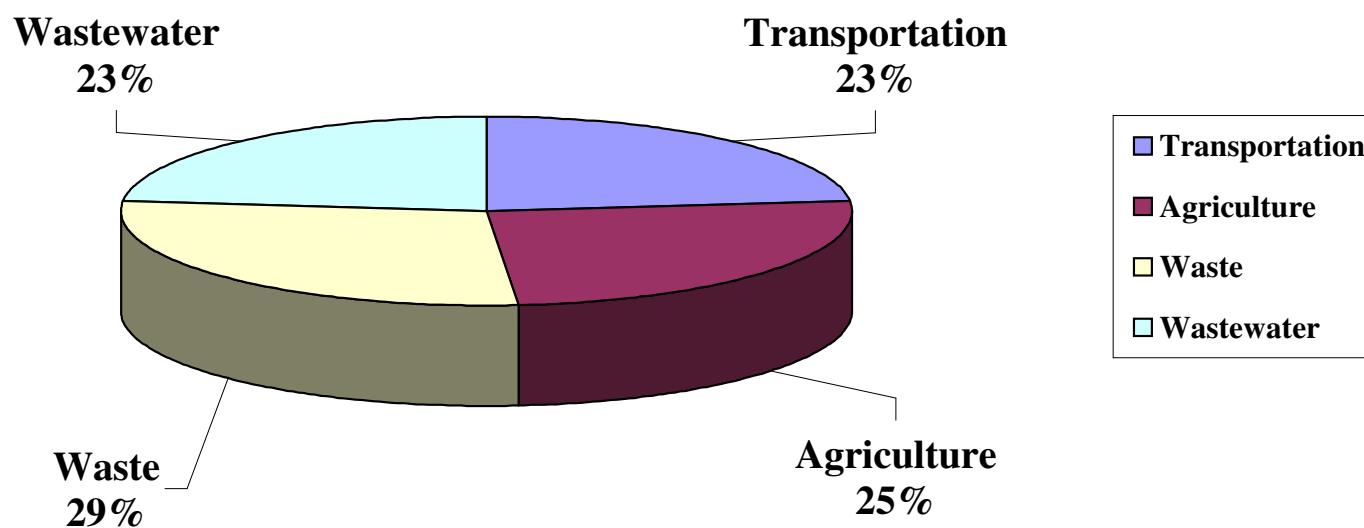


Greenhouse Gas Inventory

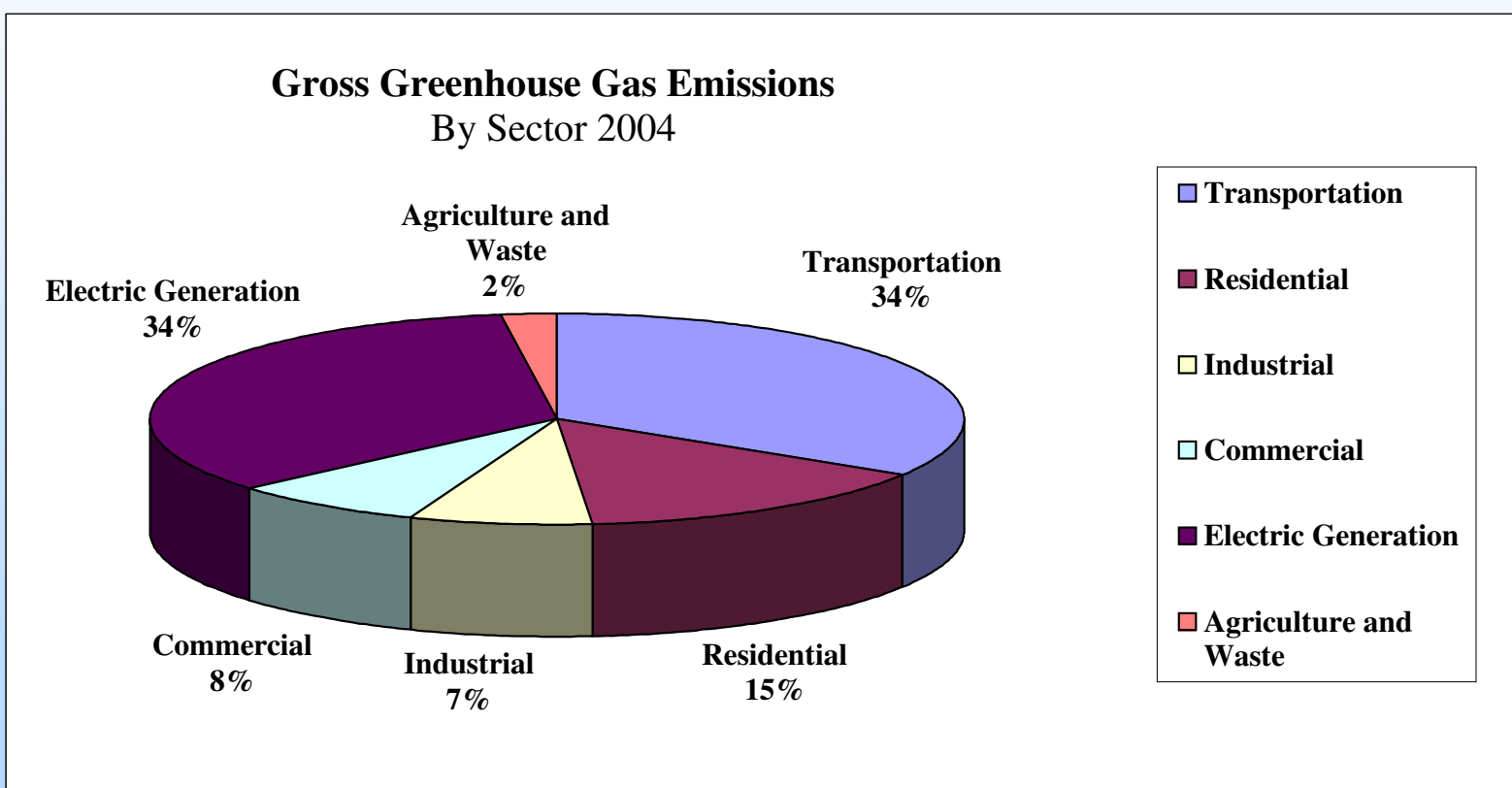


Greenhouse Gas Inventory

**Methane (CH₄) and Nitrous Oxide (N₂O) Emissions
By Sector 2004**

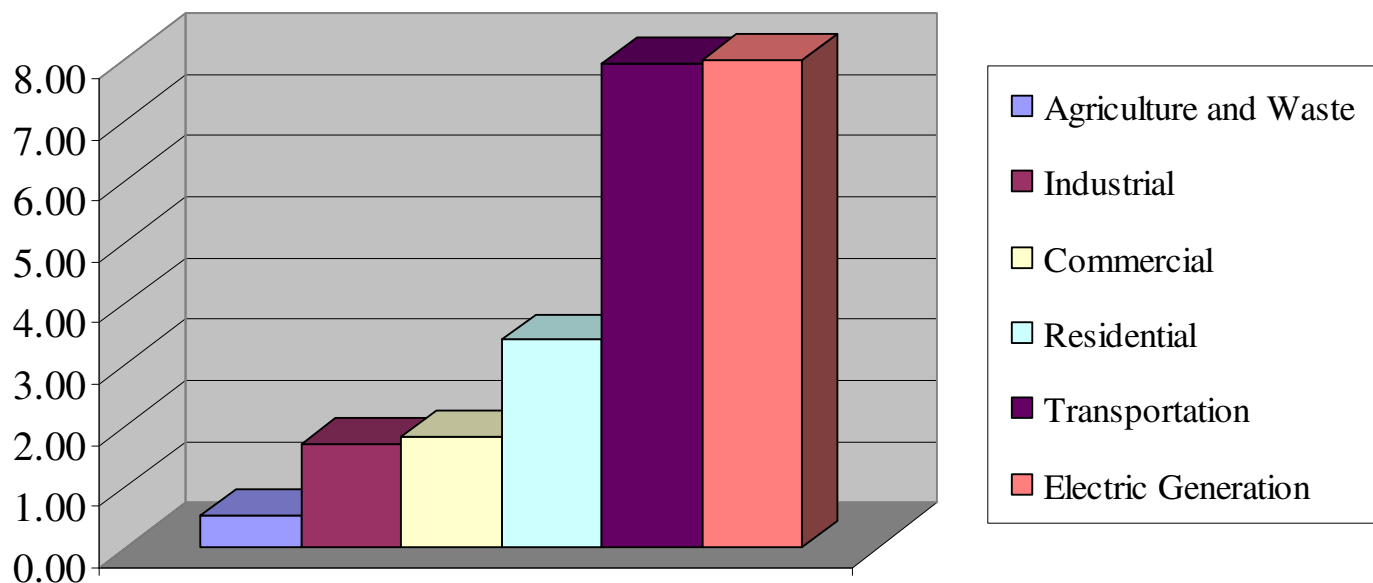


Greenhouse Gas Inventory



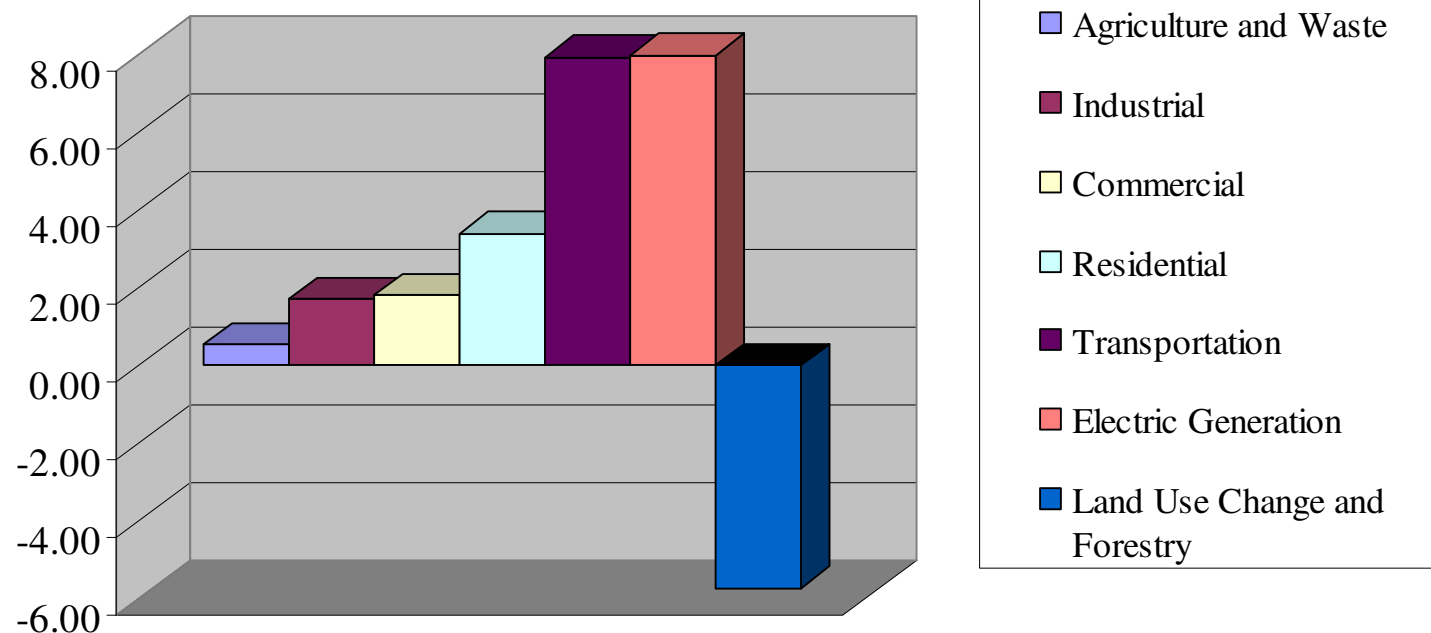
Greenhouse Gas Inventory

**Gross Greenhouse Gas Emissions
By Sector 2004**

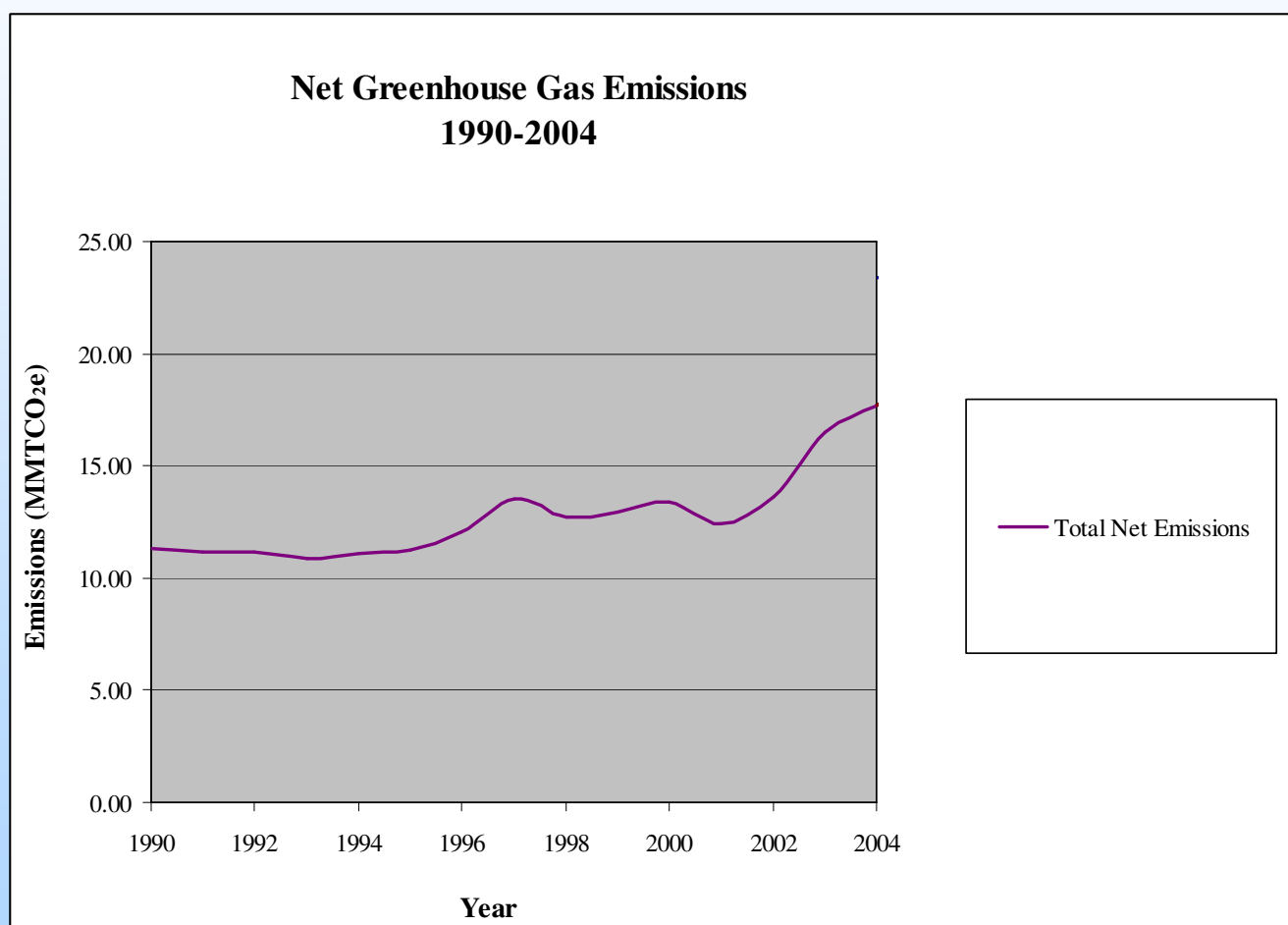


Greenhouse Gas Inventory

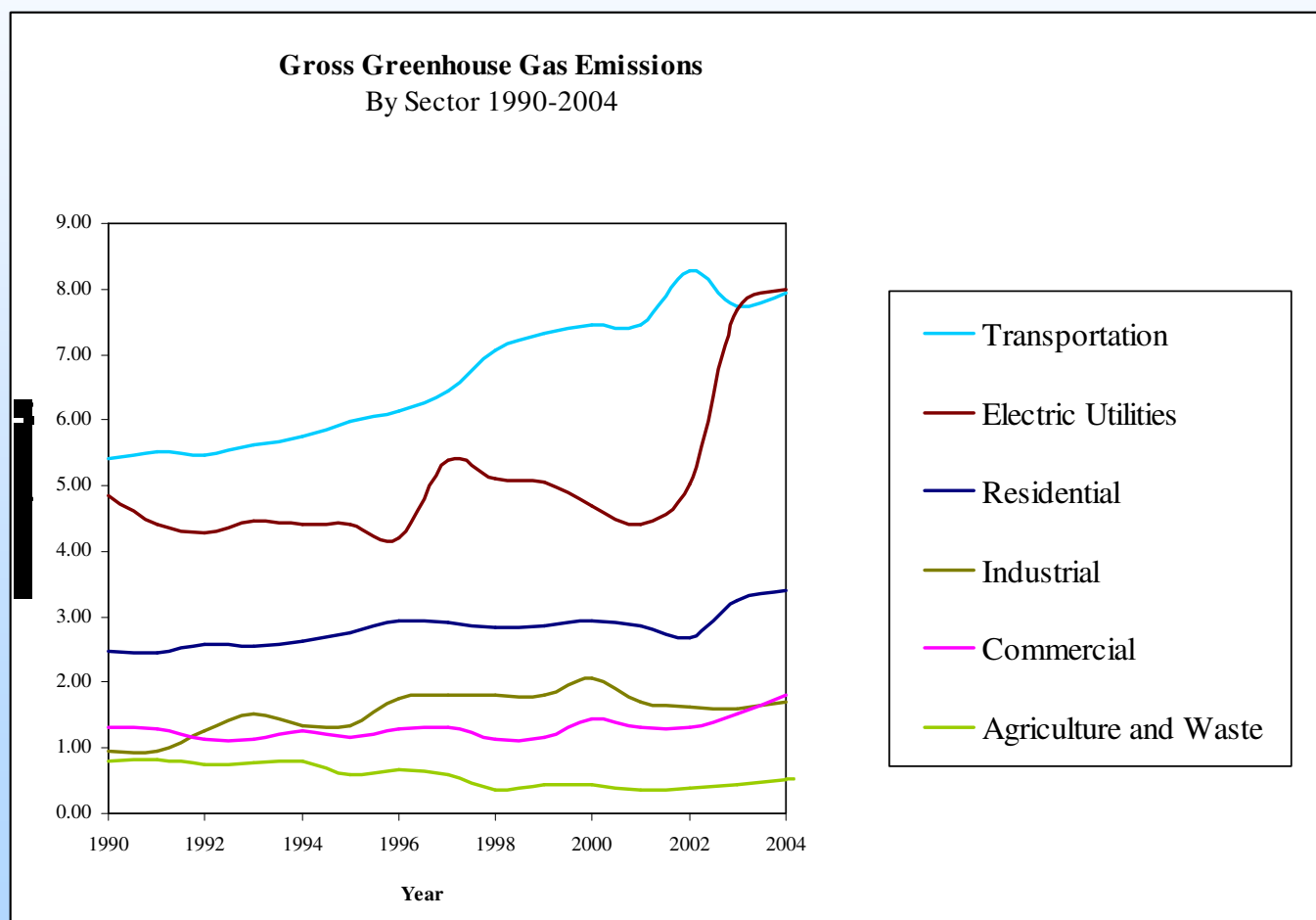
**Gross Greenhouse Gas Emissions
By Sector 2004**



Greenhouse Gas Inventory

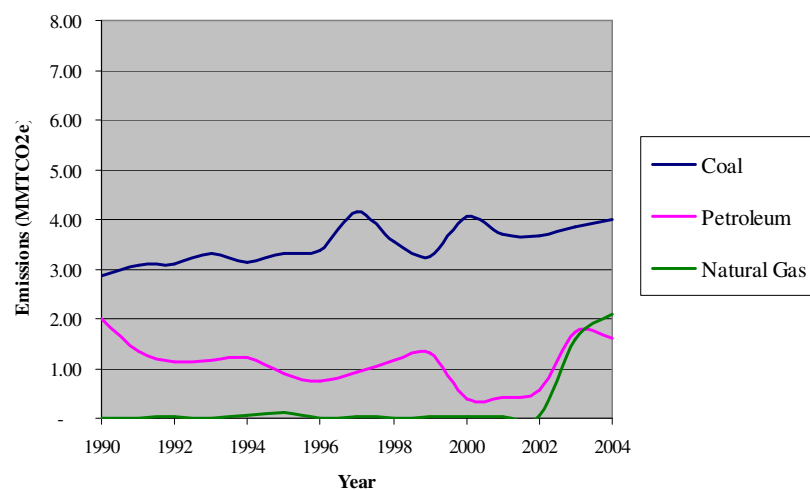


Greenhouse Gas Inventory

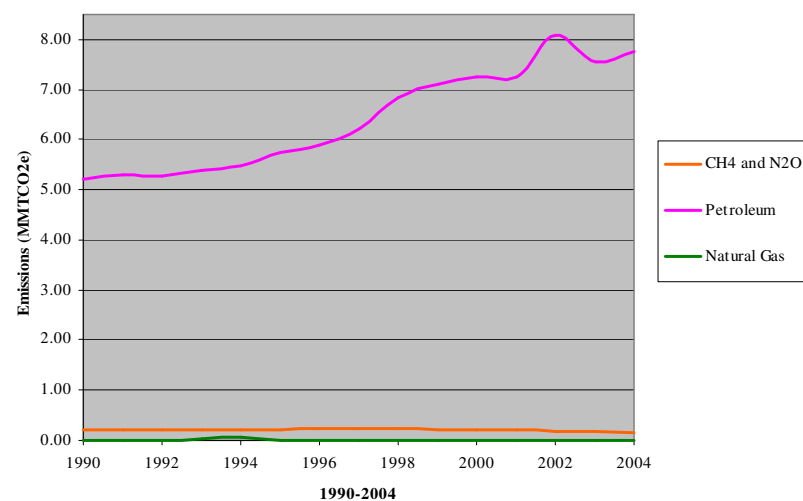


Greenhouse Gas Inventory

**Electric Generation Greenhouse Gas Emissions
By Fuel Source 1990-2004**

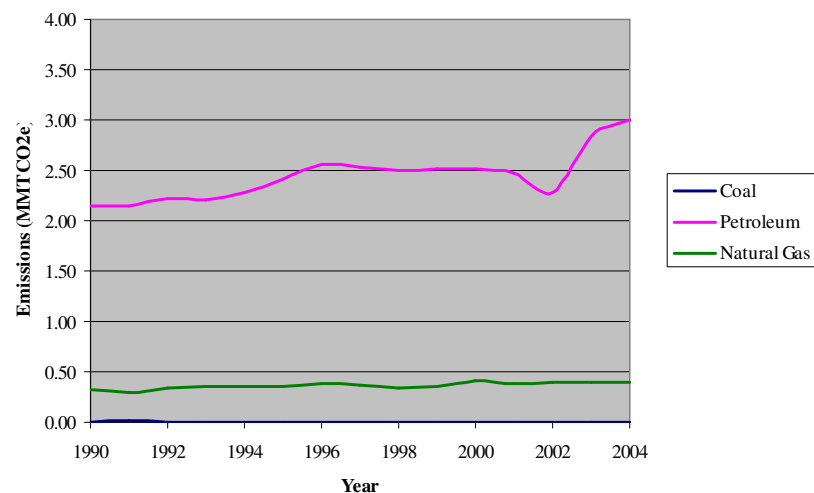


**Transportation Greenhouse Gas Emissions
1990-2004**

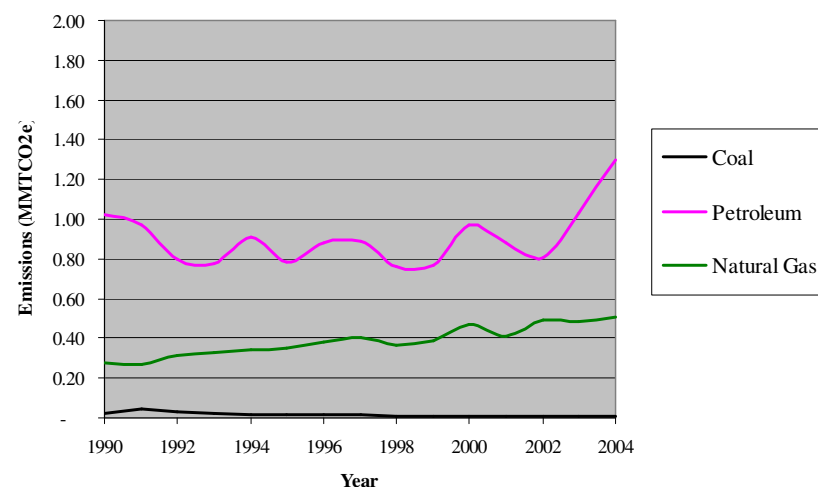


Greenhouse Gas Inventory

Residential Greenhouse Gas Emissions
By Fuel Source 1990-2004

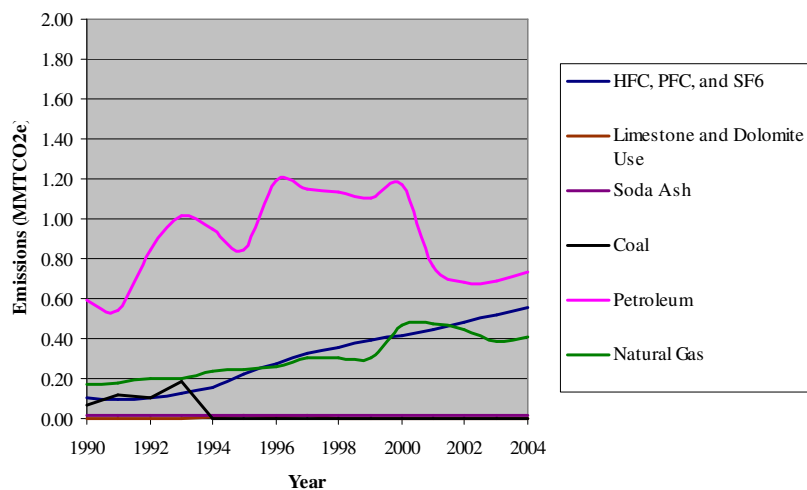


Commercial Greenhouse Gas Emissions
By Fuel Source 1990-2004

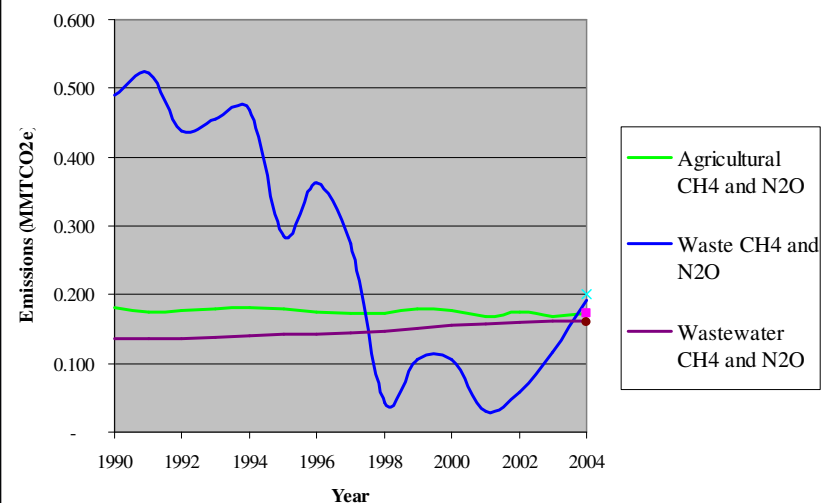


Greenhouse Gas Inventory

**Industrial Emissions
1990-2004**



**Agriculture and Waste Emissions
1990-2004**



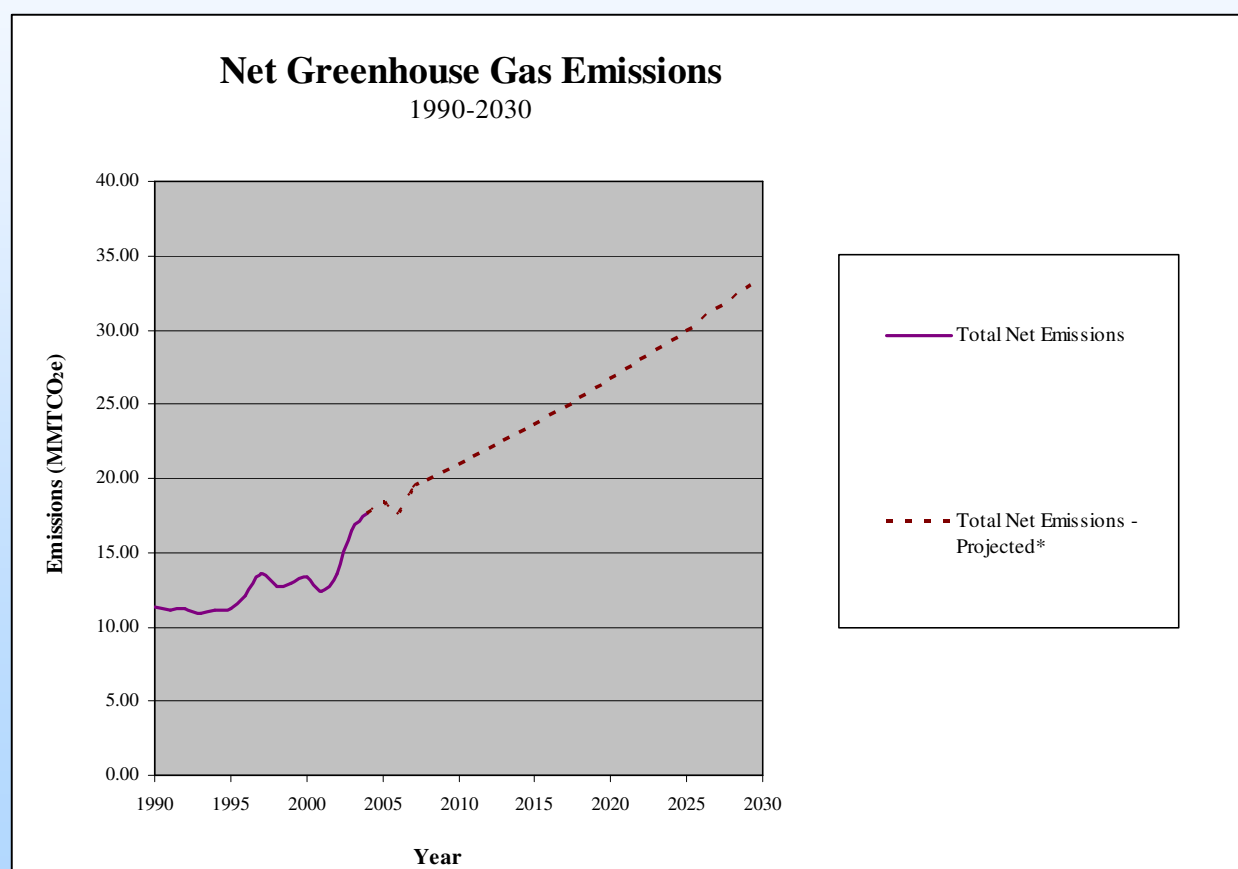
Greenhouse Gas Inventory

- Drivers of Emissions Growth
 - New Hampshire
 - Population growth
 - Economic growth
 - Sprawl type growth
 - Regional grid
 - Nationally
 - Electronics “gadgets”
 - Upward trend in light duty truck sales

Greenhouse Gas Emission Projections

- Initial inventory used to develop projections to 2030.
- Projections assume “business-as-usual” scenario with no major changes from current trends
- Projections are considered to be mid-range estimates
 - Does not account for impact of:
 - Economic recession
 - Expansion of renewable or clean energy sources
 - Potential shift to fuels with higher life-cycle emissions
 - Loss of forests
 - Impacts of climate change on heating and cooling loads

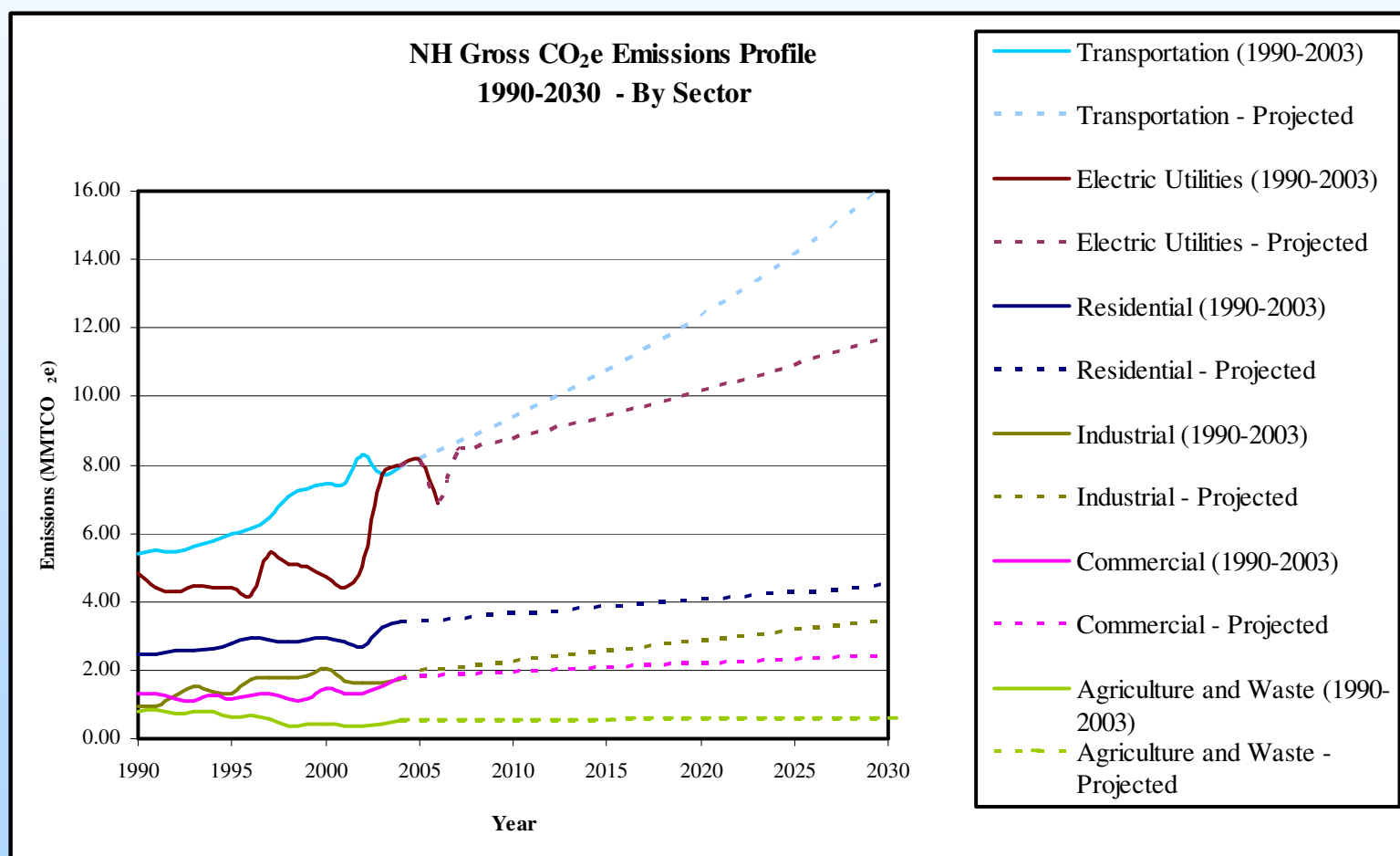
Greenhouse Gas Emission Projections



Greenhouse Gas Emission Projections

- Electricity and Transportation growing at higher rates than other sectors
- Electricity sector
 - Load growth increasing by 1.45% per year
 - 48% growth between 2004 and 2030.
- Transportation sector
 - Fuel consumption increasing by 2.8% per year
 - 102% growth between 2004 and 2030

Greenhouse Gas Emission Projections



Greenhouse Gas Emission Inventory and Projections



- Preliminary draft for Task Force and Working Group
 - review and revise as needed
- Identify sectors and sources with the greatest opportunities for reductions



Contacts

Chris Skoglund
NHDES

christopher.skoglund@des.nh.gov

271-7624

Joanne Morin
NHDES

joanne.morin@des.nh.gov

271-5552